

### DETAILED ACTION

1. The following office action is a **Final Office Action** in response to communications received on 01/29/2008. Claims 1-38 have been cancelled, and Claims 39-47 have been added.

#### **Response to Amendment**

2. Applicant's amendment to the Abstract is sufficient to overcome the objection set forth in the previous office action. The Examiner respectfully withdraws the objection.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 39 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward 2002/0138841 in view of Ho 6,118,973.

Regarding claim 39, Ward teaches the following claimed limitations, a learning method using an internet learning system for improving learning efficiency (Para.0037), comprising obtaining learning conditions including subjects to be learned (Para.0042 and Para.0043), providing a learner with learning contents including conceptual contents of minimum unit and problem groups selected respectively from a conceptual contents database and a problem database according to the learning conditions (see Para.0099, lines 1-7 and Para.0104), in which the conceptual contents database stores the conceptual contents of minimum unit produced by dividing the subjects to be

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learned into small units by maximum (Para.0094 and Para.0112, lines 1-7), and the problem database stores the problem groups with at least two difficulty levels with regard to each conceptual contents of minimum unit (Para.0117 and Para.0122, lines 5-11), and providing automatically the learner with reconstructed learning contents (Para.0153, lines 7-13 and Para.0154).

However, Ward does not explicitly disclose, the reconstructed learning contents including reconstructed problem groups with modified difficulty levels with regard to each conceptual content of minimum unit according to an answer of the learner to the problem groups; wherein each problem group regarding each conceptual content of minimum unit is automatically excluded from the reconstructed learning contents when the learner reaches a predetermined learning level for the respective problem group, so that the learner can intensively learn the conceptual content of minimum unit of which the learner does not reach the predetermined learning level.

Ho teaches, the reconstructed learning contents including reconstructed problem groups with modified difficulty levels with regard to each conceptual content of minimum unit according to an answer of the learner to the problem groups (col.13, lines 26-38 and col.18, lines 6-15), wherein each problem group regarding each conceptual content of minimum unit is automatically excluded from the reconstructed learning contents when the learner reaches a predetermined learning level for the respective problem group (see col.13, lines 46-52), so that the learner can intensively learn the conceptual content of minimum unit of which the learner does not reach the predetermined learning level.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho by incorporating a question generation unit that generates questions of different complexity level in order to assess the skill level of a student with respect to a given subject so that the system would recommend course materials that the student must study after assessing the student's skill level.

Regarding claim 43, Ward discloses the following claimed limitations, an internet learning system for improving learning efficiency (Para.0037), comprising a conceptual contents database storing conceptual contents of minimum unit produced by dividing subjects to be learned into small units by maximum (see Para.0094 and Para.0112, lines 1-7), a problem database storing problem groups with at least two difficulty levels by conceptual content of minimum unit (Para.0117 and Para.0122, lines 5-11), and learning plan configuration program providing a learner learning contents including the problem groups and the conceptual content according to learning conditions, if the learner sets the learning conditions (Para.0042 and Para.0043), and automatically providing the learner with reconstructed problem groups (Para.0153, lines 7-13 and Para.0154).

However, Ward does not explicitly disclose, the reconstructed problem groups with a modified difficulty level by the conceptual content of minimum unit according to an answer of the learner to the problem groups; wherein the learning plan configuration program can allow the learner to intensively learn the conceptual contents of minimum unit of which the learner does not reach a predetermined learning level by automatically

excluding problems for conceptual content of minimum unit of which the learner reaches the predetermined learning level from the problem groups.

Ho teaches, the reconstructed problem groups with a modified difficulty level by the conceptual content of minimum unit according to an answer of the learner to the problem groups (col.13, lines 26-38 and col.18, lines 6-15) wherein the learning plan configuration program can allow the learner to intensively learn the conceptual contents of minimum unit of which the learner does not reach a predetermined learning level by automatically excluding problems for conceptual content of minimum unit of which the learner reaches the predetermined learning level from the problem groups (col.13, lines 46-52 and col.18, lines 6-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho by incorporating a question generation unit that generates questions of different complexity level in order to assess the skill level of a student with respect to a given subject so that the system would recommend course materials that the student must study after assessing the student's skill level.

- Claims 42 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward 2002/0138841 in view of Ho 6,118,973, and further in view of Hoffman 2004/0205645.

Regarding claims 42 and 46, Ward in view of Ho teaches the claimed limitations as discussed above.

Ward further discloses, the learning conditions include a learning subject, and learning target (Para.0038 and Para.0039).

However, Ward does not explicitly disclose, the learning conditions include a learning range.

Hoffman discloses a system and method that teaches, learning conditions that include a learning range (Para.0021, lines 1-6 and Para.0030, lines 3-18).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho and further in view of Hoffman by specifying the number of classes required to complete a given course in order to allow the system to build or assemble the required learning materials according to a semester or a full-year course so that the student would have the proper time to comprehend the course.

- Claims 40 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward 2002/0138841 in view of Ho 6,118,973, in view of Ivler 6,743,024 and further in view of Tohgi 6,072,113.

Regarding claim 40, Ward in view of Ho teaches the claimed limitations as discussed above.

However, Ward in view of Ho does not positively teach, if the learner succeeds in solving a problem group for the conceptual content of minimum unit to or above a predetermined correct answer rate or number of correct answers, adding a problem group with an upwardly modified difficulty level to the reconstructed problem groups, and if the learner reaches a predetermined target level by repeating the problem

reconstructing and solving process, finishing the learning of the conceptual content of minimum unit, and if the learner solves the problem group for the conceptual content of minimum unit lower than a predetermined correct answer rate or number of correct answers, adding a problem group with a downwardly modified difficulty level to the reconstructed problem groups.

Ivler teaches, if the learner succeeds in solving a problem group for the conceptual content of minimum unit to or above a predetermined correct answer rate or number of correct answers, adding a problem group with an upwardly modified difficulty level to the reconstructed problem groups (col.6, lines 1-15), and if the learner solves the problem group for the conceptual content of minimum unit lower than a predetermined correct answer rate or number of correct answers, adding a problem group with a downwardly modified difficulty level to the reconstructed problem groups (col.7, lines 11-21 and lines 50-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho and further in view of Ivler by including a decision unit in order to check whether a student is able to answer a given number of questions accurately or not so that the system would know the actual skill level of that student thereby presenting the next learning materials based on the assessed skill level.

Even if it is implicitly implied (Ivler col.7, lines 60-63), Ward in view of Ho and further in view of Ivler does not explicitly teach, if the learner reaches a predetermined

target level by repeating the problem reconstructing and solving process, finishing the learning of the conceptual content of minimum unit.

Tohgi discloses a teaching system and method that teaches, if the learner reaches a predetermined target level by repeating the problem reconstructing and solving process, finishing the learning of the conceptual content of minimum unit (col.31, lines 16-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho and in view of Ivler and further in view of Tohgi by configuring the system in order to allow the student to keep practicing a given subject if the student does not master that particular subject so that the student would comprehend the subject before moving to the next higher level.

Regarding claim 44, Ward in view of Ho teaches the claimed limitations as discussed above.

However, Ward in view of Ho does not explicitly teach the following claimed limitations that are taught by Ivler; if the learner solves the problem group for the conceptual content of minimum unit more than a predetermined rate or number, adds a problem group with a upwardly modified difficulty level to the reconstructed problem groups (col.6, lines 1-15), if the learner solves the problem group for conceptual content of minimum unit less than a predetermined rate or number, adds a problem group with a downwardly modified difficulty level to the reconstructed problem groups (col.7, lines 11-21 and lines 50-57).

Therefore, here also, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho and further in view of Ivler by including a decision unit in order to check whether a student is able to answer a given number of questions accurately or not so that the system would know the actual skill level of that student thereby presenting the next learning materials based on the assessed skill level.

Here also, Even if it is implicitly implied (Ivler col.7, lines 60-63), Ward in view of Ho and further in view of Ivler does not explicitly teach, if the learner reaches a predetermined target level by repeating the adding and solving process, finishes a learning of conceptual contents of minimum unit reached to the predetermined target level.

Tohgi discloses a teaching system and method that teaches, if the learner reaches a predetermined target level by repeating the adding and solving process, finishes a learning of conceptual contents of minimum unit reached to the predetermined target level (col.31, lines 16-34)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho and in view of Ivler and further in view of Tohgi by configuring the system in order to allow the student to keep practicing a given subject if the student does not master that particular subject so that the student would comprehend the subject before moving to the next higher level.



- Claims 41 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward 2002/0138841 in view of Ho 6,118,973, in view of Ivler 6,743,024, in view of Tohgi 6,072,113 and further in view of Wood 2003/0129576.

Regarding claims 41 and 45, Ward in view of Ho in view of Ivler and further in view of Tohgi teaches the claimed limitations as discussed above.

However, Ward in view of Ho in view of Ivler and further in view of Tohgi does not explicitly teach, if the learner can solve the problem group for the conceptual content of minimum unit to or above the predetermined learning level, reducing or equalizing a number of problems with adding the problem group with upwardly modified difficulty level to the reconstructed problem groups; and if the learner can solve the problem group for the conceptual content of minimum unit less than the predetermined learning level, increasing a number of problems with adding the problem group with downwardly or equally modified difficulty level to the reconstructed problem groups.

Wood teaches, if the learner can solve the problem group for the conceptual content of minimum unit to or above the predetermined learning level, reducing or equalizing a number of problems with adding the problem group with upwardly modified difficulty level to the reconstructed problem groups; and if the learner can solve the problem group for the conceptual content of minimum unit less than the predetermined learning level, increasing a number of problems with adding the problem group with downwardly or equally modified difficulty level to the reconstructed problem groups (Para.0096, lines 9-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho in view of Ivler in view of Tohgi and further in view of Wood by adjusting the zone (i.e. difficulty level) of the questions either upward or downward without requiring the user to finish all the problems in that zone in order to identify the skill level of the student without wasting a lot of time and, present the student with the appropriate learning materials based on his/her skill level.

- Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ward 2002/0138841 in view of Ho 6,118,973, and further in view of Kellman 2005/0196730.

Regarding claim 47, Ward in view of Ho teaches the claimed limitations as discussed above.

However, Ward in view of Ho does not explicitly teaches, a problem explanation file database storing problem explanations according to the problems included in the problem groups, wherein the problem explanation file database provides the learner with problem explanations automatically corresponding to problems that the learner does not solve or the learner sets separately.

Kellman teaches, a problem explanation file database storing problem explanations according to the problems included in the problem groups, wherein the problem explanation file database provides the learner with problem explanations automatically corresponding to problems that the learner does not solve or the learner sets separately (Para.0149 and Para.0150).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Ward in view of Ho and further in view of Kellman by incorporating a hint database in order to provide help to the student when the student is facing some difficulty in answering or solving a given problem.

### ***Conclusion***

Applicant's amendment necessitated the new grounds of rejection presented in this final office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filled within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruk A. Gebremichael whose telephone number is (571)270-3079. The examiner can normally be reached on Monday to Friday (7:30AM-5:00PM) ALT. Friday OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THAI XUAN can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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